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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HAUGLAND, SCOTT J

ART UNIT

PAPER NUMBER

3654

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/580,902	YUKINORI ET AL.	
	Examiner	Art Unit	
	SCOTT HAUGLAND	3654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-14 and 16-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1 and 7 include new matter because there is no disclosure in the application as originally filed that "the torque generated by the first torque generating system is set at a predetermined level defining a preset torque setting" (claim 1, lines 15-16 and claim 7, lines 15-16).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al (U.S. Pat. Appl. Pub. No. 2002/0189880) in view of Yano et al (U.S. Pat. No. 6,499,554).

Tanaka et al discloses a retractor for a seat belt system for a vehicle comprising: a spindle 4 on which a webbing is wound, a frame 2 for pivotally holding the spindle, and a first torque generating system 14 including spiral spring 54 which generates torque to rotate the spindle in a winding direction in which the webbing is wound and connected to the spindle at all times so as to transmit the generated torque to the spindle, a second torque generating system (motor 10) which generates torque to rotate the spindle in the winding direction, and a torque transmitting mechanism system 5 which transmits the torque generated by the second torque generating system to the spindle. The torque transmitting mechanism system 5 does not transmit torque generated by the second torque generating system to the spindle when the second torque generating system generates torque for rotating the spindle in the seatbelt unwinding direction (abstract, par. 68). The second torque generating system generates a torque in the unwinding direction after winding the belt to put the torque transmitting mechanism system into a state in which the second torque generating system does not transmit torque to the spindle to prevent interference with the normal operation of the spindle (Fig. 6). The first torque generating system (spring unit 14) produces a predetermined torque at a point in the process of winding the seatbelt onto the spindle that is so low that the first torque generating system is incapable of winding

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the seatbelt onto spindle 4 by itself (par. 40; dashed line in Fig. 6). The second torque generating system (motor 10) has a significantly higher torque generating capability to ensure that the seat belt is wound when necessary. A seat belt fastening state detecting system is incorporated into a buckle (e.g., claim 1, lines 4-6 of Tanaka et al).

Tanaka et al does not explicitly disclose that the control system controls the torque generated by the second torque generating system according to a dangerous state.

Yano et al teaches controlling the torque of a motor 10 (second torque generating system) for winding a seat belt according to a dangerous state of a vehicle (col. 27, lines 17-25).

Assuming, arguendo, that Tanaka et al does not disclose that the retractor includes the spindle locking system in the related patent to Yano et al, Yano et al teaches providing a seatbelt retractor of the type in Tanaka et al with a spindle locking system means (6,8) for preventing the webbing from drawing that stops rotation of the spindle rotating in a webbing drawing out direction when a rotational acceleration of the spindle is greater than a first predetermined value when the webbing is accelerated in the drawing out direction and stops rotation of the spindle rotating in the drawing out direction when a deceleration of the vehicle is greater than a second predetermined value.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the retractor of Tanaka et al with a spindle locking system means for preventing the webbing from drawing that stops rotation of the

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spindle rotating in a webbing drawing out direction when a rotational acceleration of the spindle is greater than a first predetermined value when the webbing is accelerated in the drawing out direction and stops rotation of the spindle rotating in the drawing out direction when a deceleration of the vehicle is greater than a second predetermined value as taught by Yano et al to restrain a wearer of the seat belt during a vehicle emergency.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the control system of Tanaka et al control the torque of the motor (second torque generating system) according to a dangerous state of a vehicle as taught by Yano et al to safely secure a vehicle occupant without requiring additional components.

The retractor of Tanaka et al as modified appears to be capable of the intended use (wherein the torque generated by the first torque generating system (spring) is set lower than the torque generated by the second torque generating system (motor) when each are transmitted to the spindle) recited in claim 1, lines 31-35 and claim 7, lines 32-36 because the torque required for securing an occupant in an emergency would be significantly higher than the torque generated by a spring that is incapable of fully winding the seatbelt. Assuming, arguendo, that the torque of the first torque generating system is not lower than that generated by the second torque generating system, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the retractor of Tanaka et al as modified capable of generating a greater torque than the spring to allow for the case in which the spring is in or near a

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state of failure to ensure that the seat belt is wound when required and to be capable of restraining an occupant in an emergency.

The torque of the first torque generating system of the retractor of Tanaka et al as modified would be capable of restricting a passenger without causing an oppressive sensation as required by claim 1, lines 35-29 and claim 7, lines 36-40 due at least to its inability to wind the belt beyond a certain point.

With regard to claim 20, the rotary speed of the spindle would inherently increase with time as torque is applied by the drive motor 10.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al in view of Yano et al as applied to claim 1 above, and further in view of Peter (U.S. Pat. No. 2003/0201359).

Tanaka et al does not disclose a torque transmission cushioning system for cushioning a torque transmission by an elastic member arranged between the second torque generating system and the spindle.

Peter teaches a torque transmission cushioning system for cushioning a torque transmission by an elastic member 28 arranged between a torque generating system 36 and a belt spindle 12.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the retractor of Tanaka et al with a torque transmission cushioning system for cushioning a torque transmission by an elastic member arranged

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between the second torque generating system and the belt spindle as taught by Peter to simplify the spindle acceleration responsive locking mechanism.

With regard to claim 6, it would have been obvious to make an elastic force of the elastic member in the power transmission cushioning system when substantially compressed larger than the force generated at the same point by the first torque generating system to prevent false triggering of the associated locking mechanism.

Claims 7-13, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al in view of Yano et al and Fujii et al (U.S. Pat. No. 6,427,935).

Tanaka et al is described above.

Assuming, arguendo, that Tanaka et al does not disclose that the retractor includes the spindle locking system in the related patent to Yano et al, Yano et al teaches providing a seatbelt retractor of the type in Tanaka et al with a spindle locking system means (6,8) for preventing the webbing from drawing that stops rotation of the spindle rotating in a webbing drawing out direction when a rotational acceleration of the spindle is greater than a first predetermined value when the webbing is accelerated in the drawing out direction and stops rotation of the spindle rotating in the drawing out direction when a deceleration of the vehicle is greater than a second predetermined value.

Tanaka et al does not disclose a webbing action detecting system for detecting whether the webbing is drawn out, the webbing is wound, or the webbing is in a

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stopping state or a control system for controlling the torque of the second torque generating system according to an action of the webbing detected by the webbing action detecting system.

Fujii et al teaches providing a seat belt retractor with a webbing action detecting system (40, 50) for detecting whether the webbing is drawn out, the webbing is wound, or the webbing is in a stopping state and a control system (Fig. 16) for controlling the torque of the second torque generating system according to an action of the webbing detected by the webbing action detecting system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the retractor of Tanaka et al with a spindle locking system means for preventing the webbing from drawing that stops rotation of the spindle rotating in a webbing drawing out direction when a rotational acceleration of the spindle is greater than a first predetermined value when the webbing is accelerated in the drawing out direction and stops rotation of the spindle rotating in the drawing out direction when a deceleration of the vehicle is greater than a second predetermined value as taught by Yano et al to restrain a wearer of the seat belt during a vehicle emergency.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the retractor of Tanaka et al with a webbing action detecting system for detecting whether the webbing is drawn out, the webbing is wound, or the webbing is in a stopping state and a control system for controlling the torque of the second torque generating system according to an action of the webbing detected by

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the webbing action detecting system as taught by Fujii et al to provide improved control of the retractor that supports different operating modes.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al in view of Yano et al and Fujii et al as applied to claim 13 above, and further in view of Midorikawa et al (U.S. Pat. No. 6,485,057).

Tanaka et al does not disclose making the second torque generating system gradually reduce the torque with lapse of time during winding.

Midorikawa et al teaches gradually reducing the torque of a seatbelt winding mechanism during winding (col. 51, lines 16-29).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to retract the seatbelt in Tanaka et al with gradually decreasing torque as taught by Midorikawa et al to prevent discomfort to the wearer during belt tightening.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al in view of Yano et al as applied to claim 1 above, and further in view of Midorikawa et al (U.S. Pat. No. 6,485,057).

Tanaka et al does not disclose making the second torque generating system gradually reduce the torque with lapse of time during winding.

Midorikawa et al teaches gradually reducing the torque of a seatbelt winding mechanism during winding (col. 51, lines 16-29).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to retract seatbelt in Tanaka et al with gradually decreasing torque as taught by Midorikawa et al to prevent discomfort to the wearer during belt tightening.

Response to Arguments

Applicants' arguments filed 6/22/10 have been fully considered but they are not persuasive.

Applicants argue that the "not normal" spring 14 in Tanaka is not set to any specific torque level, but deteriorates from a "normal" spring and is not analogous to the claimed first torque generating system. However, para. 97 of the specification does not say that the torque generated by the first torque generating system is set at a predetermined level. It says that the spring is "set in such a manner that its spring force is the same as a force substantially capable of restricting the passenger seated in the seat, so that an oppressive sensation caused by fastening the seat belt can be reduced to be lower than that of a usual seat belt." The typical spring used in the art (no special spring is disclosed by applicants) would generate a torque that varies through its operating range and would depend on the amount of belt withdrawn. Therefore, there is no support for the claimed torque generated by the first torque generating system being set at a predetermined level. The spring associated with the dashed line plot in Fig. 6 of Tanaka is set so that it applies less force at a given belt extension than a "usual" (e.g., the "normal" spring in Tanaka). This spring is disclosed as being incapable of completely winding the belt by itself. Applicants' disclosure does not clearly indicate

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how the applicants' spring is obtained and does not appear to exclude the process disclosed in Tanaka for obtaining such a spring. The retractor in Tanaka is fully operable with springs having different torque characteristics including those that would not normally fully retract the belt by themselves.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. The new ground of rejection was necessitated by the amendments to claim 1, lines 15-16 and claim 7, lines 15-16. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SCOTT HAUGLAND whose telephone number is

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(571)272-6945. The examiner can normally be reached on Mon. - Fri., 10:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on (571) 272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael R Mansen/
Supervisory Patent Examiner, Art Unit 3654

/SJH/